

REMARKS

An Office Action was mailed on February 20, 2007 making a restriction requirement.

The Examiner has determined that multiple patentably distinct species are claimed. In the Examiner's opinion, restriction is required to one of the following species:

1. Species I shown in Figs. 3-6, drawn to a deterministic embodiment using static Huffman Coding, according to the Examiner independent claims 1 and 27 read on this species;
2. Species II shown in Figs. 9-12, drawn to a deterministic embodiment using adaptive Huffman Coding, according to the Examiner independent claims 2, 4 and 28 read on this species;
3. Species III shown in Figs. 14-15 and 17-18, drawn to a randomized embodiment using adaptive Huffman Coding, according to the Examiner independent claims 3, 5 and 29 read on this species; and
4. Species IV shown in Figs. 14-15 and 17-18, drawn to a randomized embodiment using adaptive Huffman Coding, according to the Examiner independent claims 37 and 39 read on this species.

The restriction is respectfully traversed.

Provisional Election

Responsive thereto, Applicant hereby elects provisionally Species I which according to the Examiner is drawn to a deterministic embodiment using static Huffman Coding, for further prosecution on the merits. Claims 1, 6-27, 30-38, and 43-47 read on the species and are elected for prosecution on the merits subject to traverse of the restriction requirement.

Traverse of Restriction Requirement

Applicant respectfully traverses the restriction requirement and respectfully requests that the restriction requirement be withdrawn.

The Examiner indicates that *"the species are independent or distinct because each species requires separate search independent from one another."* Pg. 3, Office Action.

Applicant respectfully submits that the Examiner has failed to meet the burden required and that in addition to or in the alternative, the species are not considered patentably distinct.

MPEP 808.02 requires an establishment of the burden that is greater than that shown by the Examiner. The MPEP requires *"the examiner must show by appropriate explanation one of the following:*

(A) Separate classification thereof: This shows that each invention has attained recognition in the art as a separate subject for inventive effort, and also a separate field of search. Patents need not be cited to show separate classification.

(B) A separate status in the art when they are classifiable together: Even though they are classified together, each invention can be shown to have formed a separate subject for inventive effort when the examiner can show a recognition of separate inventive effort by inventors. Separate status in the art may be shown by citing patents which are evidence of such separate status, and also of a separate field of search.

(C) A different field of search: Where it is necessary to search for one of the inventions in a manner that is not likely to result in finding art pertinent to the other invention(s) (e.g., searching different classes/subclasses or electronic resources, or employing different search queries, a different field of search is shown, even though the two are classified together. The indicated different field of search must in fact be pertinent to the type of subject matter covered by the claims. Patents need not be cited to show different fields of search.

Furthermore, MPEP 808.01 requires that "Election of species should not be required between claimed species that are considered clearly unpatentable (obvious) over each other."

The Hoffman Tree is a well-known data structure that permits the Hoffman encoding. The *Static* Hoffman Tree assumes that the structure of the tree does not change with time, and that this structure is fully dependent on *known* symbol probabilities.

As opposed to this, the *Adaptive* Hoffman Tree assumes that the structure of the tree changes with time, and that this time-varying structure is obtained by *estimating* (or *inferring*) the symbol probabilities "on-line". Thus, the *adaptive* structure reduces to the static structure once the symbol probabilities are inferred.

The distinct component of the adaptive data structure and its creation is the estimation phase. As is well known in the art, methods in the literature clearly describe how this can be achieved in a single phase, as opposed to a two-phase process.

In fact, the standard text books in the field (including the ones cited in the prior art of the present patent application) list the static and adaptive Hoffman trees as part of the basic knowledge of field. These structures are sufficiently basic that they are usually included in any undergraduate curriculum teaching data compression.

Thus, any search, i.e. patents or literature, which leads to information about the *Static* Hoffman Tree yields information about the *Adaptive* Hoffman Tree.

Similarly, the methods of *estimating* or *inferring* the symbol probabilities are also quite fundamental. Wherein, a contribution of the present invention involves the *deterministic* assignments based on the symbol probabilities that solve the unsolved data compression problems in the art, the *deterministic* method used for the *Static* Hoffman Tree is analogous to the one used for the *Adaptive* Hoffman Tree in that it incorporates the *estimating* or *inferring* phase.

A further contribution of the present invention is the *randomized* assignments (based on the symbol probabilities) that solve the unsolved data compression problem in the art.

Similarly, the randomized method used for the *Static* Hoffman Tree is analogous to the one used for the *Adaptive* Hoffman Tree in that it incorporates the *estimating* or *inferring* phase.

Thus, for the reasons given the species do not have separate classification thereof, have not gained separate status in the art, and do not require different field of search.

Furthermore, each of the embodiments is derived from the same novel assignment rules that can be applied to *either* of these *static* or *adaptive* structures. Thus, credible arguments may be formulated by the U.S. Patent & Trademark Office at a later time that the claims of a divisional application are not patentable over the claims in the present application.

It is respectfully submitted that the characterization by the Examiner that there are four distinct species is not supported by the present claim set. Accordingly, the Examiner is respectfully requested to withdraw the restriction requirement for the reasons given.

In addition thereto or in the alternative, while the disclosure refers to Hoffman trees and coding (by way of background only), the claims do not but rather refers to Oommen-Rueda trees.

Thus, by way of example only, while claim 1 sets out a method of utilizing Oommen-Rueda trees, claim 2 sets out the exact same methodology, preceded by the step of creating a Oommen-Rueda Tree, and thereafter following precisely the same methodology set out in claim 1. In other words, these are not distinct species of claims, but rather claim 1 can be viewed as a broader claim in which the step of creating the Oommen-Rueda Tree has not been included.

Furthermore, claim 1 does not relate to a deterministic embodiment using a static Hoffman coding, as characterized by the Examiner, and is not a distinct species from claim 2, which itself

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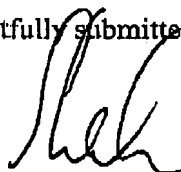
does not deal with an adaptive Hoffman coding. Similarly, the other claims in the present application to not deal with Hoffman coding, as characterized by the Examiner, and are of the same species as the claims 1 and 2 previously referenced."

Accordingly, the Examiner is respectfully requested to withdraw the restriction requirement for the reasons given.

In view of the remarks set forth above, this application is in condition for examination and ready passage to allowance, which is respectfully requested. However, if for any reason the Examiner should consider this application not to be in condition for examination or allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper, including any extension fees, may be charged to Deposit Account No. 50-1290.

Respectfully submitted,



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